CLAIMS

1. A method of measuring a signal to noise ratio of a received optical signal in an optical transmission system, the method comprising:

   at an optical transmitter, transmitting a bit sequence;

   at a receiver, receiving a wavelength modulated with the bit sequence, converting said received wavelength to a corresponding electrical signal, determining a spectrum for said electrical signal and determining an electrical signal to noise ratio from said spectrum for that received optical signal..

2. A method as claimed in claim 1, wherein the transmission system has one or more optical add/drop sites.

3. A method as claimed in claim 2, wherein said transmitter is operated in an alarm inhibit signal mode so as to generate a pseudorandom bit sequence.

4. A method as claimed in claim 3, wherein said pseudorandom bit sequence comprises a 2^7 bit sequence.

5. Software in machine readable form on a storage medium and arranged to perform a method as claimed in claim 1.

6. A method of equalising the transmission properties of a plurality of wavelengths in a wavelength division multiplexed optical transmission system comprising an optical transmitter, a receiver and a transmission path therebetween, the method comprising:

   at the transmitter, transmitting a bit sequence as a modulation on each said wavelength;

   at the receiver, receiving each said wavelength modulated with the bit sequence, converting that received wavelength to a corresponding electrical signal, determining a spectrum for said electrical signal and determining from that spectrum an electrical signal to noise ratio, and,

at the transmitter, adjusting the amplitude of each said transmitted wavelength such that the calculated electrical signal to noise ratios of said wavelengths are substantially equal.

7. A method as claimed in claim 6, wherein the transmission system has one or more optical add/drop sites.

8. A method as claimed in claim 7, wherein said transmitter is operated in an alarm inhibit signal mode so as to generate a pseudorandom bit sequence.

9. A method as claimed in claim 8, wherein said pseudorandom bit sequence comprises a 2^7 bit sequence.

10. Software in machine readable form on a storage medium and arranged to perform a method as claimed in claim 6.

11. Apparatus for equalising the transmission properties of a plurality of wavelengths in a wavelength division multiplexed optical transmission system comprising an optical transmitter arranged to transmit to a receiver a bit sequence as a modulation of each said wavelength, the apparatus comprising:

spectrum analyser means disposed at the receiver and arranged to determine, from a spectrum of an electrical signal derived from a received optical signal for each wavelength, an electrical signal to noise ratio;

and,

means for adjusting the amplitude of each said transmitted wavelength such that the calculated optical signal to noise ratios of said wavelengths are substantially equal.

12. Apparatus as claimed in claim 12, wherein the transmission system has one or more optical add/drop sites.

13. An optical transmission system incorporating equalisation apparatus as claimed in claim 13.

14. An optical receiver station for use in a wavelength division multiplexed optical transmission system, the receiver station comprising: a demultiplexer arranged to separate a received multiplexed signal into a plurality of individual wavelengths; receivers, one for each wavelength and arranged to convert that wavelength into a corresponding electrical signal; and electrical spectrum analyser means arranged to determine, from a spectrum of the electrical signal derived from each received optical wavelength, an electrical signal to noise ratio for that wavelength.